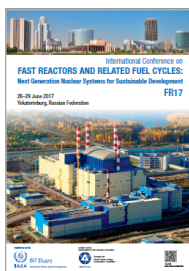


International Conference on Fast Reactors and Related Fuel Cycles: Next Generation Nuclear Systems for Sustainable Development (FR17)



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Development of Fast Reactors in the USSR and the Russian Federation; Malfunctions and Incidents in the Course of their Operation and Solution of Problems.

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The initial idea of potential nuclear fuel breeding originated in the USA and the first success in development of fast reactors designed for implementation of this idea was achieved there. With a very small delay, similar studies started in the USSR; however, that was the place where fast reactor development reached its peak. The chief scientific supervisor of these research studies in the USSR was A.I. Leypunsky. Great achievements in this area were made by scientists and engineers from France and the UK.

After completion of nuclear weapon tests, A.I. Leypunsky sent a Position Paper to the First Chief Directorate, where he stated the principal physical ideas and the high-priority tasks on fast reactors. These proposals were approved in the Government Decree of 1950. It was followed by development and construction of the critical facility BR-1, research reactor BR-2, research reactor BR-5 (BR-10), critical facility BFS-1, research reactor BOR-60, critical facility BFS-2, the pilot and demonstration power reactor BN-350, power reactor BN-600 and power reactor the BN-800.

Over the past 60 years operation of research and power reactors in our country has accumulated vast experience, including abnormal and emergency situations, their causes and ways of overcoming them, ensuring reliable and safe operation of fast reactors with sodium coolant.

In the future –assimilation of the closed fuel cycle, NPPs with the BN-1200 reactors, ensuring competitive economy.

Country/Int. Organization

Russia. Institute for Physics and Power Engineering

Author: Mr KOCHETKOV, Lev (Alexeevich)

Presenter: Mr KOCHETKOV, Lev (Alexeevich)

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